In the Specification

Kindly replace paragraph [0003] with the following:

As fiber material, cellulose has been used from old times in the form of spun fiber using short fiber of naturally grown cotton and hemp. Methods to produce filament material instead of short fiber include wet spinning, used for instance to dissolve cellulose such as rayon in a special solvent such as carbon disulfide, and dry spinning, used for instance to produce a cellulose derivative such as cellulose acetate which is then dissolved in an organic solvent such as methylene chloride or acetone, followed by spinning while evaporating the solvent, and furthermore, a method has been disclosed (see ~~patent reference 1~~ JP-51-70316 A1) in which a cellulose acetate melt containing a large amount of water-soluble plasticizer such as polyethylene glycol is subjected to melt spinning to produce for hollow fibers to be used as filter membrane. The latter method, however, often suffers severance of yarns during the spinning process, and has to use a low draft ratio to permit melt spinning, making it impossible to produce fiber with a sufficiently small fineness for common clothing. The method generally can produce thick yarns such as for hollow filaments for filter membrane, but very low in strength, they are stiff, less flexible, and easily broken if a fabric is produced, so it will be extremely difficult to manufacture clothing and other common products that require both a small fineness and a high strength.

Kindly replace paragraph [0006] with the following:

It has also been disclosed (see ~~patent reference 2~~ JP-11-506175T) that the use of the melt blow method for spinning of cellulose ester permits the spinning of yarns with a small fineness. However, though fiber structures produced by melt blow are widely used as industrial nonwoven fabrics, their applications are essentially very limited because such fiber cannot serve for production of woven and knitted fabrics. Further, the melt blow method has essential difficulty in achieving a uniform fiber diameter, and the coefficient of variation (CV) in fineness, which represents the unevenness in fineness, is 30 to 40% in most cases, indicating that the thickness of single fibers varies largely.

Kindly replace paragraph [0008] with the following:

It is known that thin yarns with a uniform fineness, such as those conventionally used in clothing, can be produced by melt spinning with a high productivity if using a composition prepared by kneading, at a specific mixing ratio, a cellulose mixed ester and a plasticizer that is compatible to said cellulose mixed ester (see ~~patent reference 3~~ JP-2004-182979 A1).

Kindly replace paragraph [0010] with the following:

Thus, fabrics with high heat resistance, good yarn properties and aesthetic appeal that can be used as material for general clothing cannot be produced easily by subjecting cellulose, a biomass-based material, to a melt spinning process that is free of environmentally harmful solvents.

~~[Patent reference 1] JP-51-70316-A1~~

~~[Patent reference 2] JP-11-506175T~~

~~[Patent reference 3] JP-2004-182979-A1~~

Kindly replace paragraph [0011] with the following:

[Disclosure of the Invention]

~~[Problems to be Solved by the Invention]~~

~~The object of the invention is to solve the above problems in order~~ It could therefore be helpful to provide a fabric comprising cellulose mixed ester fiber suitable for clothing that has high heat resistance and improved properties such as strength, and a production method thereof.

Kindly replace paragraph [0012] with the following:

~~[Means for Solving the Problems]~~ [Summary]

~~The present invention aims to solve the above problems, and the~~ We thus provide fabric for clothing of the invention at least partly comprises cellulose mixed ester fiber with a glass

transition point (Tg) of 160°C or more and a strength in the range of 1.3 to 4 cN/dtex. As a desired embodiment, it is preferred that the initial tensile modulus of the fiber is in the range of 30 to 100 cN/dtex, the CV in single fiber fineness being 10% or less, average single fiber diameter being in the range of 5 to 50 μm, the content of plasticizers in the fiber being in the range of 0 to 1.0 wt% relative to the weight of the cellulose mixed ester fiber, the total molecular weight of the acyl groups per glucose in said cellulose mixed ester being in the range of 120 to 140, and the degree of substitution being in the range of 2.6 to 2.8.

Kindly replace paragraph [0013] with the following:

The production method of fabrics comprising cellulose mixed ester fibers ~~of the invention~~ is a production method of fabrics for clothing that at least partly comprises cellulose mixed ester fiber, wherein a composition consisting of at least 70 to 95 wt% of a cellulose mixed ester and 5 to 20 wt% of a water-soluble plasticizer is subjected to a melt-spinning process to produce a fiber of 5 to 50 μm, and after and/or before converting it into a form of fabric, said plasticizer is eluted out of the fiber by aqueous treatment.

Kindly replace paragraph [0016] with the following:

~~[Effect of the Invention]~~

~~The invention~~ We thus provide[[s]] a fabric for clothing comprising heat-resistant fiber that is mainly composed of cellulose mixed ester produced from cellulose, a biomass-based material. Fabrics composed of cellulose mixed ester fiber with a high Tg and a high strength show good heat resistance, and no surface shine and fusion, and they have good properties such as strength required for clothing as well as moderate stiffness and tension, and also have aesthetic value-added properties such as high gloss, good color development properties, and perceived uniform fabric surface as well as moisture emission and absorption. With high gloss and vivid colors in particular, they can be very useful in the fields of fashionable clothing production. The production method ~~of the invention~~ uses environment-friendly, high-quality, melt-spun yarns and elutes plasticizer easily during textile processing processes, to facilitate easy production of fabrics composed of heat-resistant cellulose mixed ester fiber.

Kindly replace paragraph [0017] with the following:

[Brief Description of Drawings]

~~[Fig.1]~~ Fig.1 shows changes in weight caused by aqueous treatment of the knitted fabric produced in Example 4 ~~of the invention~~. Specifically, it illustrates the amount of the plasticizer eluted by the aqueous treatment.

Kindly replace paragraph [0018] with the following:

[~~Best Mode for Carrying Out the Invention~~ Detailed Description]

The fabric for clothing ~~of the invention~~ at least partly comprises fiber that is mainly composed of cellulose mixed ester. With a fabric structure containing cellulose mixed ester fiber, the fabric for clothing produced has good properties such as moisture absorption, color development properties, and uniform gloss, as well as good mechanical characteristics.

Kindly replace paragraph [0019] with the following:

Described below are cellulose mixed ester fiber to be used in the fabric for clothing ~~of the invention~~, and fabrics that at least partly comprise said cellulose mixed ester fiber.

Kindly replace paragraph [0020] with the following:

In the cellulose mixed ester ~~used for the invention~~, hydroxyl groups in the cellulose are esterified with two or more different acyl groups. There are no specific limitations on the method to produce the cellulose mixed ester, and a conventionally known method can be used.

Kindly replace paragraph [0021] with the following:

Specifically, cellulose mixed esters that can be ~~used for the invention~~ include cellulose acetate propionate, cellulose acetate butyrate, cellulose acetate capronate, cellulose acetate caprylate, cellulose acetate laurate, cellulose acetate palmitate, cellulose acetate stearate, cellulose acetate olate, cellulose acetate phthalate, and cellulose propionate butyrate. Among others, the cellulose mixed ester ~~used for the invention~~ should be either cellulose acetate propionate or cellulose acetate butyrate, or both, because they are easy to manufacture and high in heat resistant.

Kindly replace paragraph [0026] with the following:

For the cellulose mixed ester fiber ~~of the invention~~, it is important to have a glass transition point (Tg) of 160°C or more. If Tg is 160°C or more, the fabric containing said cellulose mixed ester fiber will not suffer undesired shine and fusion under hot pressing by ironing, suggesting that the fabric has a high heat resistance required for clothing material. To produce a fabric with a required heat resistance, said cellulose mixed ester fiber preferably has a glass transition point (Tg) of 170°C or more, most preferably 180°C or more.

Kindly replace paragraph [0027] with the following:

It is important for the cellulose mixed ester fiber ~~of the invention~~ to have a strength in the range of 1.3 to 4 cN/dtex. If the strength is 1.3 cN/dtex or more, a fabric comprising the cellulose mixed ester fiber will have sufficiently large tear strength. A larger strength is better, but at the present time, it is difficult to achieve a strength of more than 4 cN/dtex. The strength of fiber is more preferably 1.5 cN/dtex or more, still more preferably 1.7 cN/dtex or more.

Kindly replace paragraph [0028] with the following:

The initial tensile modulus of the cellulose mixed ester fiber ~~of the invention~~ should be in the range of 30 to 100 cN/dtex. If it is 30 cN/dtex or more, a fabric comprising the cellulose mixed ester fiber will have textural features such as moderate stiffness and tension, while if it is 100 cN/dtex or less, the fabric comprising the cellulose mixed ester fiber will have textural features such as moderate softness. To obtain fabric for clothing with textural features such as moderate softness, stiffness, and tension, the initial tensile modulus is preferably in the range of 35 to 90cN/dtex, most preferably 40 to 80 cN/dtex.

Kindly replace paragraph [0029] with the following:

The cellulose mixed ester fiber ~~of the invention~~ should have an average fiber diameter in the range of 5 to 50 μm. For the invention, the side faces of 20 filaments are observed with a scanning electron microscope, and the measured width of each filament in the direction perpendicular to the fiber axis is provided for the average fiber diameter calculation. In view of

the texture of the fabric comprising said cellulose mixed ester, an average diameter of 5 μm or more is preferred to achieve a moderate fabric thickness. An average diameter of 50 μm or less is preferred to obtain a soft fabric. In view of the texture of the fabric, said cellulose mixed ester preferably has an average fiber diameter in the range of 10 to 45 μm, most preferably 15 to 40 μm.

Kindly replace paragraph [0030] with the following:

The cellulose mixed ester fiber ~~of the invention~~ preferably has a CV (coefficient of variation) in single filament fineness of 10% or less. The CV in fineness is a parameter generally used to represent the variation in the fineness over the single filament that constitute multi-filaments, and calculated by the following equation (2) from the standard deviation and the average value of single filament diameter obtained by observing the side face of filaments with an electron microscope and measuring the width of the fiber filaments in the direction perpendicular to the fiber axis.

Kindly replace paragraph [0032] with the following:

~~For the invention, if~~ If the variation in the single filament fineness is small, with a CV in the single filament fineness of 10% or less, fabrics produced will have a perceived uniform surface with uniform gloss and color to allow the fabric for clothing to have a preferred beautiful appearance.

Kindly replace paragraph [0033] with the following:

It is preferred that the cellulose mixed ester fiber ~~of the invention~~ is virtually free of pores. ~~For the invention~~[[,]] A ~~a~~ pore is defined as an empty space with a major axis length of 0.01 to 2 μm existing within the fiber. For the invention, a fiber is deemed to be uniform and free of pores if only less than 5 such pores exist within the fiber when the cross-sections of 20 filaments are observed with an electron microscope. The hollow fiber for the filter has very large number of pores which are produced during the plasticizer removal. Such fiber can be a good material for filters, but is likely to suffer a decrease in strength and friction resistance depending on the size and number of the pores. The fiber for the invention is free of pores, and therefore the

fabric produced from it will be high in frictional strength and will not suffer significant quality deterioration.

Kindly replace paragraph [0034] with the following:

It is preferred that said cellulose mixed ester fiber accounts for 50wt% or more of the fabric for clothing ~~of the invention~~ in order to prevent weakening of the advantageous effect ~~of the invention~~. If said fabric contains 50wt% or more of said cellulose mixed ester fiber, said fiber will have vivid colors and good chromogenic properties, in addition to surface gloss and beautiful uniform colors resulting from uniform yarn quality, leading to strong aesthetic appeal as material for fabrics for clothing. Moreover, said cellulose mixed ester fiber has a strength, heat resistance, hygroscopicity, and dimensional stability required for clothing, in addition to moderate stiffness and tension, and can be good material to produce suitable fabrics for clothing that have good texture.

Kindly replace paragraph [0035] with the following:

A fabric produced by combining the cellulose mixed ester fiber ~~of the invention~~ with polyester fiber has high hygroscopicity and good color development properties, making up for polyester's faults. A fabric consisting of 50wt% of the cellulose mixed ester and 50wt% of polyester, for instance, can have a moisture absorption coefficient of 2% or more at 20°C and 65%RH and also have improved black color development properties and vivid colors. With a high dimensional stability, it will have a performance suitable as a fabric for clothing.

Kindly replace paragraph [0036] with the following:

A combination of the cellulose mixed ester fiber ~~of the invention~~ with cotton yarns ~~will works to achieve~~ achieves a shape stability and quick drying characteristics in addition to the hygroscopicity of cotton, and also obtain a moderate gloss, allowing the fabric to have both fashionable and functional features.

Kindly replace paragraph [0037] with the following:

Described below is the production method of fabrics for clothing that at least partly comprises the cellulose mixed ester fiber ~~of the invention~~.

Kindly replace paragraph [0040] with the following:

If used alone, said cellulose mixed ester is poor in thermal flowability and cannot be melt-spun effectively. For melt spinning, a plasticizer may be added to increase the thermal flowability of the composition, but a cellulose mixed ester that contains a plasticizer has a lower glass transition point (Tg) of about 100°C, leading to a problem with heat softening if it is directly used to produce a fabric. ~~For the invention[[,]] the~~ The cellulose mixed ester fiber in the final fabric product should have a glass transition point (Tg) of 160°C or more, and therefore it is important for said plasticizer to be a water-soluble compound that can be leached out easily by aqueous treatment. Here, a substance is deemed to be water-soluble if 1wt% or more of it can dissolve in water at 20°C. A highly water-soluble substance that dissolves up to 5wt% or more in water at 20°C can be easily removed with water after fiber production, allowing the advantageous effect of the invention to be realized easily.

Kindly replace paragraph [0041] with the following:

~~For the invention, the~~ The content of said water-soluble plasticizer in the cellulose mixed ester composition is preferably in the range of 5 to 20wt%. A water-soluble plasticizer content of 20wt% or less serves to improve the melt spinning characteristics, decrease the frequency of yarn breakage during melt spinning, and to produce fiber with a moderate fineness and strength, which prevent pores from forming in the fiber during the aqueous treatment process for plasticizer removal, allowing the fiber to have a uniform structure. On the other hand, a water-soluble plasticizer content of 5wt% or more leads to a high thermal flowability, which serves to use a lower spinning temperature to control the thermal decomposition of the composition, allowing the resulting fiber to have good color tone and mechanical characteristics.

Kindly replace paragraph [0042] with the following:

Said water-soluble plasticizers ~~for the invention~~ is preferably one or more selected from the following group: polyethylene glycol, polypropylene glycol, poly(ethylene-propylene) glycol, and end-capped polymers produced from them, as represented by the general formula (1) described below.

Kindly replace paragraph [0044] with the following:

Said cellulose mixed ester composition ~~used for the invention~~ may contain other compounds such as epoxy compounds, weak organic acids, phosphites, and thiophosphites, each of which may be used alone or two or more of which may be used in combination as required, as stabilizers for prevention of heat deterioration and coloring, as long as they do not cause damage to the required performance. There will be no problems if other additives including organic acid based biodegradation accelerators, lubricants, antistatic agents, dyes, pigments, lubricants, and delusterants are added.

Kindly replace paragraph [0045] with the following:

When mixing the cellulose mixed ester ~~used for the invention~~ with a plasticizer and other required additives, a common, known mixing instrument such as extruder, kneader, roll mill, and Banbury type mixer may be used without specific limitations. Said composition mainly composed of the cellulose mixed ester and said plasticizer is preferably pelletized with an extruder before feeding it to the melt spinning machine, or the extruder is preferably connected to the melt spinning machine via a pipe, in order to minimize the formation of babbles. Such a pelletized mixture is preferably dried before melt spinning down to a water content of 0.1wt% or less in order to prevent the hydrolysis and babble formation during melting.

Kindly replace paragraph [0047] with the following:

As described above, the cellulose mixed ester fiber ~~used for the invention~~ preferably has a CV (coefficient of variation) in single filament fineness of 10% or less. The CV in fineness is a parameter generally used to represent the variation in the fineness over the single filament that constitute a multifilaments. The fabric production method ~~of the invention~~ contains a process for eluting water-soluble plasticizers from fiber, and therefore, a variation in the fineness of single filament will lead to uneven elution of the water-soluble plasticizers. Since this causes uneven dying of the fiber and an uneven heat resistant distribution, a smaller CV in fineness of the fiber is more preferred. Thus the CV in the fineness of single filament is preferably 10% or less, more preferably 5% or less. For the invention, a molten polymer may be spun through a

nozzle and taken up by a godet roller to produce a uniform yarn with a CV in fineness of 10% or less.

Kindly replace paragraph [0048] with the following:

For the fabric production method ~~of the invention~~, it is important to carry out aqueous treatment for removal of plasticizers after producing the cellulose mixed ester fiber. The aqueous treatment means the procedure which is performed by immersing the fiber in a solution mainly composed of water. There are no specific limitations on the method to be used, and the fiber produced by melt spinning may be allowed to run continuously through a water bath, or said fiber may be shaped into cheese package followed by processing with a batch type cheese dyeing machine. After said shaping, or after fabric production, furthermore, similar continuous or batch type beam processing, or batch type aqueous treatment with a jet dyeing machine may be carried out.

Kindly replace paragraph [0050] with the following:

If a plasticizer is added, the cellulose mixed ester fiber ~~of the invention~~ tends to adsorb highly lipophilic surface active agents, and therefore, it is preferred that water-soluble plasticizers are removed first by aqueous treatment without using scouring agents, followed by removal of oils and pastes by processing with an aqueous treatment by the solution containing a scouring agent.

Kindly replace paragraph [0053] with the following:

Said cellulose mixed ester fiber ~~used for the invention~~ is characterized in that its glass transition point (Tg) is increased by removing the plasticizers. It is preferred that the rise in glass transition point (Tg) caused by plasticizer removal is 60°C or more. If the glass transition point (Tg) increases by 60°C or more, melt spinning can be performed before plasticizer removal, and naturally, the heat resistance improves after plasticizer removal, serving to prevent surface shine and fusion of fabric from being caused by heating under pressure such as ironing.

Kindly replace paragraph [0055] with the following:

~~In the invention, the removal~~ Removal of said plasticizers allows the cellulose mixed ester fiber to increase in strength by 0.2 cN/dtex or more. This may be because pores are not formed in the fiber as a result of the elution of said plasticizers which are mixed with the cellulose mixed ester in a completely compatible way, and also because the removal of said plasticizers works to increase the density of the cellulose mixed ester which is the main component that develops strength.

Kindly replace paragraph [0056] with the following:

~~In the invention, said~~ The plasticizer ~~are~~ is quickly removed by said aqueous treatment, but it is preferred that the final plasticizer content in the cellulose mixed ester fiber constituting the fabric is 0 to 1.0wt% relative to the weight of the cellulose mixed ester fiber.

Kindly replace paragraph [0057] with the following:

In the fabric production method ~~of the invention~~, said water-soluble plasticizer elution process comprises aqueous treatment which may be carried out at a stage following the production of cellulose mixed ester fiber, at a stage following the production of fabric, and/or at a stage prior to the production of fabric.

Kindly replace paragraph [0061] with the following:

[Examples]

~~The invention is~~ Our fabrics and methods are described more specifically below by using examples, though they are not intended to place any limitations on the invention. The degree of substitution, melt viscosity, fiber strength, initial tensile modulus, CV in filament fineness, fiber diameter, Tg, and thermal deformation of the cellulose mixed ester were determined as follows.

(1) Degree of substitution of cellulose mixed ester

The cellulose mixed ester is dried, and 0.9g of it was weighed out, followed by addition and dissolution of 35ml of acetone and 15ml of dimethylsulfoxide, and addition of another 50ml of acetone. While stirring, 30ml of 0.5N sodium hydroxide was added and the solution was sapoinified for 2 hours. Then 50ml of hot water was added to rinse the side wall of the flask, and the solution was titrated with 0.5N sulfuric acid using phenolphthalein as a indicator. Elsewhere

a blank test was carried out by the same procedure. After the completion of the titration, the supernatant was diluted 100-fold, and the composition of the organic acid was analyzed by ion chromatography. The degree of substitution was calculated by the following equation from above measurements and composition analysis by ion chromatography.

Kindly replace paragraph [0103] with the following:

[Industrial Applicability]

~~The invention~~ We provide a fabric comprising heat-resistant fiber consisting mainly of a cellulose mixed ester produced from cellulose, which is a biomass-based material. The fabric comprising cellulose mixed ester fiber ~~produced according to the invention~~ has a gloss and vivid colors and serves preferably in the fashionable apparel manufacturing industry.